armor plate. Moreover, this furnace \vas intended to work with a *negative* pressure in the heating' chamber, with the result that the reheating of the armor plate had to be accomplished while it was surrounded by a current of colder air drawn in through the door of the furnace. The effects of such a method of operation are obvious.

It had been planned to carbonize and heat two armor plates at a time, placing one above the other and separating them by a layer of charcoal. It may be stated that the lower plate was carbonized much more slowly than the upper; and it was necessary to give up the idea of carbonizing two plates at a time. Actually, the carbonizing was done one plate at a time, double the number of furnaces were required with twice the expense for installation.

Moreover, the men in charge of the Russian works were so thoroughly impressed with the prestige of the Krupp Company that they would not consent to the cutting down of these heads to the level of the hearth of the furnace.

XVII. PIT FURNACES

In pit-reheating furnaces the defect which is commonly encountered consists in the incorrect location of the waste-gas

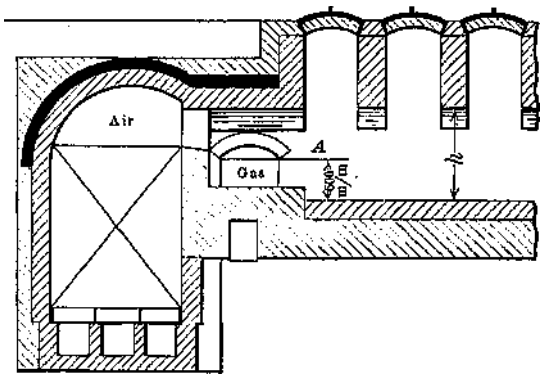

FIG. 112.

ports. In these furnaces, by reason of the considerable height of the heating chamber, it is very necessary that attention should be paid to the locating of the waste-gas port at the level of the hearth of the pits. Unless this is done, the lower parts of the